

D.O.T. 66

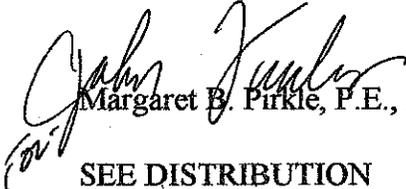
**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

**INTERDEPARTMENT CORRESPONDENCE**

**FILE** BRST-1022(10) Cherokee County  
P. I. No. 642400

**OFFICE** Preconstruction

**DATE** April 9, 2003

**FROM**  Margaret B. Pirkle, P.E., Assistant Director of Preconstruction

**TO** SEE DISTRIBUTION

**SUBJECT** PROJECT CONCEPT REPORT APPROVAL

Attached for your files is the approval for subject project.

MBP/cj

Attachment

**DISTRIBUTION:**

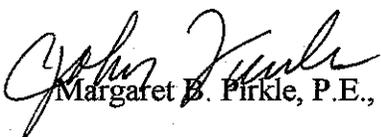
David Mulling  
Harvey Keepler  
Jerry Hobbs  
Percy Middlebrooks  
Michael Henry  
Phillip Allen  
Marta Rosen  
Paul Liles  
Ben Buchan  
Kent Sager  
BOARD MEMBER

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

**INTERDEPARTMENT CORRESPONDENCE**

**FILE** BRST-1022(10) Cherokee County **OFFICE** Preconstruction  
P.I. No. 642400

**DATE** March 25, 2003

**FROM**  Margaret B. Pirkle, P.E., Assistant Director of Preconstruction

**TO** Frank L. Danchetz, P.E., Chief Engineer

**SUBJECT PROJECT CONCEPT REPORT**

This project is the replacement of a structurally deficient bridge on SR 372 over Etowah River, 2.3 miles southeast of Ballground, Georgia. The existing bridge, constructed in 1960, is load limited with a sufficiency rating of 39. State Route 372 at this location is a rural two lane roadway with 12' travel lanes with rural shoulders. Traffic is projected to be 6,500 VPD and 10,000 VPD in the years 2009 and 2029 respectively. The posted speed and the design speed are 55 MPH.

The construction proposes to relocate SR 372 west of its present location, extending a total of 0.76 mile. The proposed new bridge will be 280' x 44' and will be located just west of the existing bridge structure. The relocated SR 372 will consist of two, 12' lanes with 10' rural shoulders (2' paved). Traffic will be maintained on the existing bridge while the proposed bridge is constructed.

Environmental concerns include requiring a COE 404 Permit; a Categorical Exclusion will be prepared; time saving procedures are appropriate.

The estimated costs for this project are:

	<u>PROPOSED</u>	<u>APPROVED</u>	<u>PROG DATE</u>	<u>LET DATE</u>
Construction (includes E&C and inflation)	\$2,806,000	\$2,806,000	2007	FY-07
Right-of-Way	\$ 80,000	\$ 15,000		
Utilities*	LGPA	LGPA		

\*Cherokee County signed LGPA for utilities 7-27-99.

Frank L. Danchetz

Page 2

BRST-1022(10) Cherokee

March 25, 2003

This project is in the STIP. I recommend this project concept be approved.

MBP:JDQ/cj

Attachment

CONCUR

  
Thomas L. Turner, P.E., Director of Preconstruction

APPROVE

  
Frank L. Danchetz, P.E., Chief Engineer

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

**INTERDEPARTMENTAL CORRESPONDENCE**

**FILE:** BRST-1022(10) Cherokee  
P.I. Number 642400

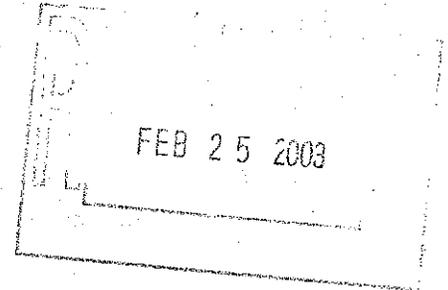
**OFFICE:** Engineering Services

**DATE:** February 25, 2003

**FROM:** David Mulling, Project Review Engineer *REW*

**TO:** Meg Pirkle, Assistant Director of Preconstruction

**SUBJECT:** **CONCEPT REPORT**



We have reviewed the concept report submitted February 18, 2003 by the letter from James B. Buchan dated February 18, 2003, and have no additional comments.

The costs for this project are:

Construction	\$2,333,220
Inflation	\$239,155
E&C	\$233,322
Reimbursable Utilities	\$10,000 (LGPA signed on 7/27/99)
Right of Way	\$80,000

REW

c: Ben Buchan, Attn: Ted Cashin

## SCORING RESULTS AS PER MOG 2440-2

<b>Project Number:</b> BRST-1022(10)		<b>County:</b> Cherokee		<b>PI No.:</b> 642400	
<b>Report Date:</b> February 18, 2003		<b>Concept By:</b> DOT Office: Consultant Design			
<input checked="" type="checkbox"/> Concept Stage		Consultant: Parsons Brincherhoff Quade & Douglas			
<b>Project Type:</b> Choose One From Each Column		<input type="checkbox"/> Major <input checked="" type="checkbox"/> Minor	<input type="checkbox"/> Urban <input checked="" type="checkbox"/> Rural	<input type="checkbox"/> ATMS <input checked="" type="checkbox"/> Bridge Replacement <input type="checkbox"/> Building <input type="checkbox"/> Interchange Reconstruction <input type="checkbox"/> Intersection Improvement <input type="checkbox"/> Interstate <input type="checkbox"/> New Location <input type="checkbox"/> Widening & Reconstruction <input type="checkbox"/> Miscellaneous	
<b>FOCUS AREAS</b>	<b>SCORE</b>	<b>RESULTS</b>			
Presentation	100				
Judgement	100				
Environmental	100				
Right of Way	100				
Utility	100				
Constructability	100				
Schedule	100				

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

**INTERDEPARTMENT CORRESPONDENCE**

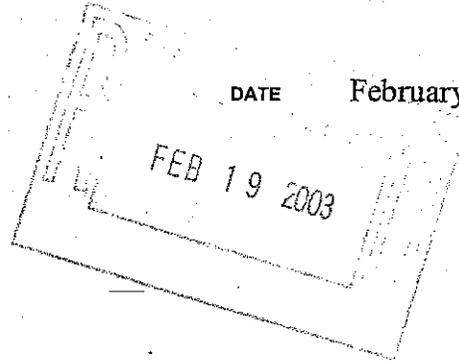
FILE **BRST-1022(10) Cherokee County**  
SR 372 @ Etowah River 2.3 mi SE of Ball Ground  
P.I. No. 642400-

OFFICE Atlanta

FROM *James B. Buchan MBA*  
James B. Buchan, State Consultant Design Engineer

DATE February 18, 2003

TO Margaret B. Pirkle, Assistant Director of Preconstruction



SUBJECT **PROJECT CONCEPT REPORT**

Attached is the original copy of the Concept Report for your further handling for approval in accordance with the Plan Development Process (PDP).

Those on the distribution list below should review the Concept Report and send comments and/or the signature page to the Preconstruction Office within 10 days as per the PDP.

If you have any questions or require further information please call Ted Cashin at (404)463-6135 or John Durand of Parsons Brinckerhoff Quade & Douglas at (404) 364-5236.

*Distribution:*

David Mulling, Project Review Engineer  
Harvey Keeper, State Environmental/Location Engineer  
Phillip Allen, State Traffic Safety and Design Engineer  
Marta Rosen, State Transportation Planning Administrator  
Herman Griffin, Office of Financial Management Administrator  
Kent Sager, District Engineer - Cartersville  
Paul Liles, State Bridge & Structural Engineer

JBB:MBA:EJC

cc: Parsons Brinckerhoff Quade & Douglas

DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA  
Office of Consultant Design

PROJECT CONCEPT REPORT (DRAFT)

Project Number: BRST-1022(10)

County: Cherokee

P. I. Number: 642400

Federal Route Number: N/A

State Route Number: 372

DESCRIPTION: SR 372 over Etowah River

Recommendation for approval:

DATE 2-18-03



DATE 2-18-03

~~Project Manager~~  
James B. Buchanan *MVB*  
State Consultant Design Engineer

The concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Plan (RTP) and/or the State Transportation Improvement Program (STIP).

DATE \_\_\_\_\_

\_\_\_\_\_  
State Transportation Planning Administrator

DATE \_\_\_\_\_

\_\_\_\_\_  
State Office of Financial Management Administrator

DATE \_\_\_\_\_

\_\_\_\_\_  
State Environmental/Location Engineer

DATE \_\_\_\_\_

\_\_\_\_\_  
State Traffic Safety and Design Engineer

DATE \_\_\_\_\_

\_\_\_\_\_  
District 6 Engineer

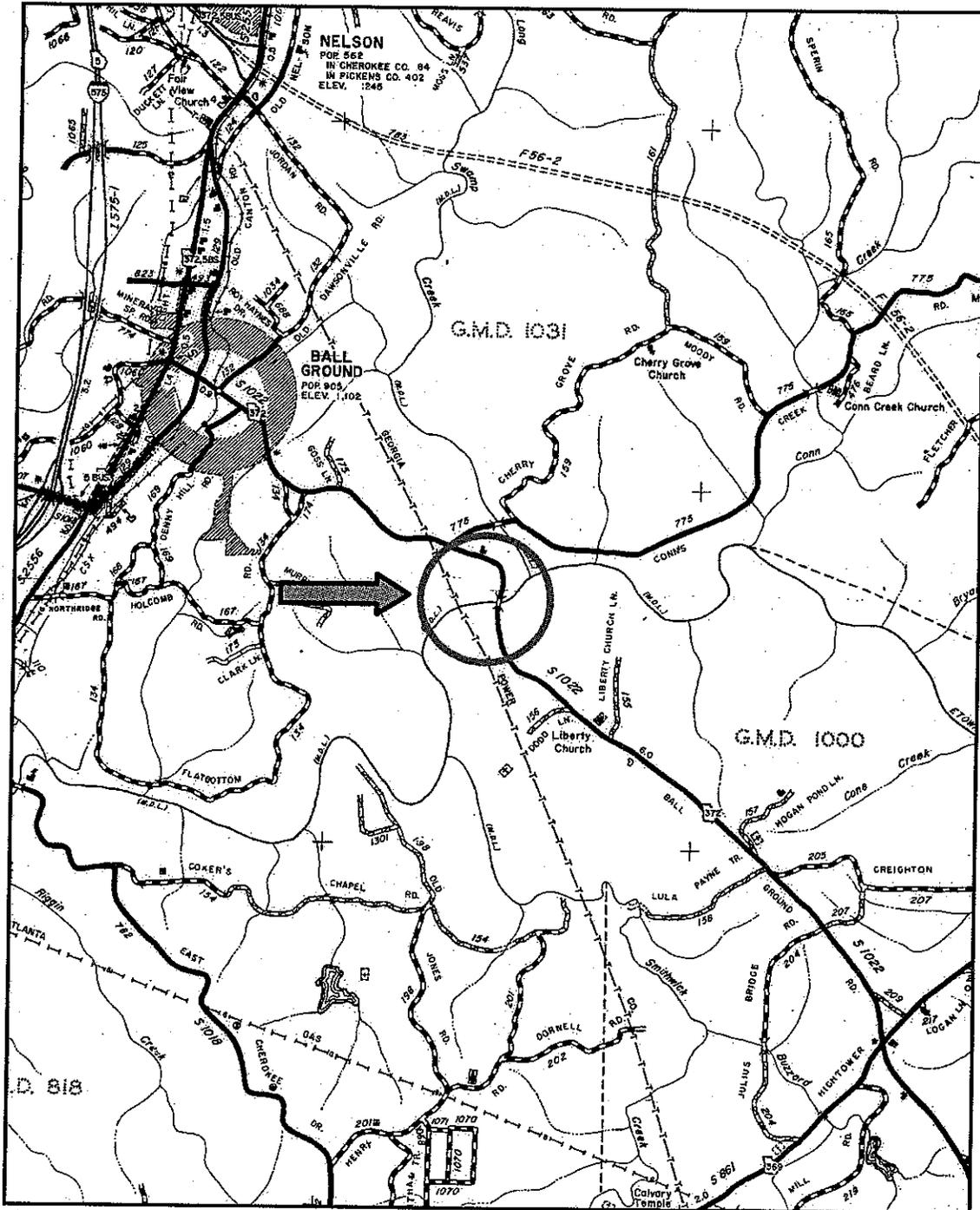
DATE \_\_\_\_\_

\_\_\_\_\_  
State Project Review Engineer

DATE \_\_\_\_\_

\_\_\_\_\_  
State Bridge and Structural Design Engineer

Project Concept Report page 2  
Project Number: BRST-1022(10)  
P. I. Number: 642400  
County: Cherokee



Scale: 1 inch = 1 mile

**Location Map**

**Project: BRST-1022(10), Cherokee County, PI No.: 642400-**  
**Description: SR 372 @ Etowah River, 2.3 mi SE of Ball Ground**

Project Concept Report page 3  
Project Number: BRST-1022 (10)  
P. I. Number: 642400  
County: Cherokee

**Need and Purpose:** See attached Need & Purpose Statement.

**Description of the proposed project:** Project BRST-1022(10) is the replacement of the SR 372 bridge over the Etowah River, 2.3 miles S.E. of the City of Ball Ground. The project length is approximately 4000 ft. (0.76 mi.), beginning at M.P. 11.11 and ending to M.P. 11.87. The purpose of this project is to replace a structurally deficient and functionally obsolete bridge on SR 372 over the Etowah River. The existing bridge sufficiency rating is currently 39.17.

**Is the project located in a Non-attainment area?**  X  Yes   No

The proposed design of this project does not add any capacity to S.R. 372. The existing roadway has two lanes. The proposed roadway will be designed for two lanes. The project is identified in the District 6 STIP.

**PDP Classification:** Minor

**Project Designation:** Full Oversight ( ), Exempt ( X ), State Funded( ), or Other ( )

**Functional Classification:** Rural Major Collector Road

**U. S. Route Number(s):** None

**State Route Number(s):** 372

**Traffic (AADT):**

Current Year: (2009) 6500

Design Year: (2029) 10000

**Existing design features:**

- Typical Section: 2-12 ft. travel lanes with variable width grass shoulders.
- Posted speed 55 mph Maximum degree of curvature: 8° ±
- Maximum grade: 9.8%
- Width of right of way: 80 ft
- Major structures: The 192'-0" bridge consists of a 64'-0"-64'-0"- 64'-0" composite section continuous unit. The bridge roadway curb to curb clear width is 24 ft. and has a sufficiency rating of 39.17. Structure I.D. No: 057-0036-0.
- Major interchanges or intersections along the project: None

**Proposed Design Features:**

Proposed typical section(s): Two 12'-0" travel lanes with 10'-0" shoulders. Typical section attached.

- Proposed Design Speed Mainline 55 mph
- Proposed Maximum grade Mainline 7.0%                      Maximum grade allowable 7.0%
- Proposed Maximum grade Side Street N/A                      Maximum grade allowable 9.0%
- Proposed Maximum grade driveway 10.0%
- Proposed Maximum degree of curve 6°00'                      Maximum degree allowable 6° 00'
- Right of Way
  - Width: 110 ft additional on the west side
  - Easements: Temporary ( ), Permanent (X), Utility ( ), Other ( )
  - Type of access control: Full ( ), Partial ( ), By Permit (X), Other ( )
  - Number of parcels: 9    Number of displacements: None
    - Business: 0
    - Residences: 1
    - Mobile homes: 0
    - Other: 0
- Structures:
  - Bridges: The proposed bridge will be 44'-0" wide, consisting of two 12'-0" travel lanes and 10'-0" shoulders. The bridge is expected to be approximately 280'-0" long.
  - Retaining Walls: None.
- Major intersections and interchanges: None
- Traffic control during construction: Traffic shall be maintained on the existing bridge while the proposed bridge is constructed offset from the existing bridge.
- Design Exceptions to controlling criteria anticipated:
 

	<u>UNDETERMINED</u>	<u>YES</u>	<u>NO</u>
HORIZONTAL ALIGNMENT:	( )	( )	(X)
ROADWAY WIDTH:	( )	( )	(X)
SHOULDER WIDTH:	( )	( )	(X)
VERTICAL GRADES:	( )	( )	(X)
CROSS SLOPES:	( )	( )	(X)
STOPPING SIGHT DISTANCE:	( )	( )	(X)
SUPERELEVATION RATES:	( )	( )	(X)
HORIZONTAL CLEARANCE:	( )	( )	(X)
SPEED DESIGN:	( )	( )	(X)
VERTICAL CLEARANCE:	( )	( )	(X)
BRIDGE WIDTH:	( )	( )	(X)
BRIDGE STRUCTURAL CAPACITY:	( )	( )	(X)
- Design Variances: None
- Environmental concerns: An archaeological site (the Long Swamp Site) surrounds the project, and three endangered species exist within the project limits.

Project Concept Report page 5  
Project Number: BRST-1022(10)  
P. I. Number: 642400  
County: Cherokee

- Level of environmental analysis:
  - Are Time Savings Procedures appropriate? Yes (X), No ( ),
  - Categorical exclusion anticipated (X),
  - Environmental Assessment/Finding of No Significant Impact (FONSI) ( ), or
  - Environmental Impact Statement (EIS) ( ).
- Utility involvement: Buried and overhead utilities include an existing 12-inch waterline supported by the bridge structure.

**Project responsibilities:**

- Design, Office of Consultant Design
- Right of Way Acquisition, District 6 Pre-construction ( Right of Way Office)
- Relocation of Utilities, Cherokee County
- Letting to contract, General Office ( Office of Contract Administration)
- Supervision of construction, District 6 Construction Office
- Providing material pits, Contractor
- Providing detours, District 6 Construction

**Coordination**

- Initial Concept Meeting date and brief summary: December 9, 2002. Attach minutes: Yes
- Concept meeting date: Pending.
- P. A. R. meetings, dates and results: None Anticipated.
- Public involvement: None Anticipated.
- Local government comments: Cherokee Signed for Utilities 7-27-99.
- Other projects in the area: None identified.
- Other coordination to date: None identified.

**Scheduling – Responsible Parties' Estimate**

- Time to complete the environmental process: 12 Months.
- Time to complete preliminary construction plans: 4 Months.
- Time to complete right of way plans: 2 Months.
- Time to complete the Section 404 Permit: 3 Months.
- Time to complete final construction plans: 9 Months.
- Time to complete to purchase right of way: 9 Months.
- List other major items that will affect the project schedule: N/A Months.

Project Concept Report page 6  
Project Number: BRST-1022 (10)  
P. I. Number: 642400  
County: Cherokee.

Alternates considered: (1) Build proposed bridge offset to the west from existing; demolish existing bridge; (2) Build proposed bridge on same location of the existing with off-site detour; close road; (3) Build proposed bridge by staging construction and maintaining traffic on site; (4) No Build; (5) Build proposed bridge on same location as existing with an on-site detour.

Comments:

Comparison Summary of Concepts 1 - 4

Alternate (1) was selected because the existing alignment required horizontal curve improvement of the 8 degree curves. Improving the alignment allows the proposed bridge to be constructed parallel and offset from the existing.

Alternate (2) was eliminated due to the lack of a practical off-site detour route during construction.

Alternate (3) was eliminated due to the higher cost of staging bridge construction.

Alternate (4) was eliminated due to long term maintenance costs of a structurally deficient bridge and the deficient horizontal clearance of the existing bridge.

Alternate (5) was eliminated due to increased environmental impacts from additional construction activities.

**Attachments:**

1. Cost Estimates (Construction including E&C & Inflation)
  - a. Alternate (1)
  - b. Alternate (3)
2. Typical sections
3. Need and Purpose Statement
4. Traffic Assignments
5. Flexible Pavement Design
6. Bridge Inventory Data Listing
7. Project Concept Conformity – Certification Letter
8. Concept Team Meeting Minutes
9. Location and Design Notice (On Minor Projects)

**PRELIMINARY COST ESTIMATE**

DATE: February 5, 2003

PREPARED BY: Heath & Lineback Engineers, Inc.

PROJECT NO.: BRST-1022 (10)

P.I. NO.: 642400

LENGTH: 4000 ft. (0.76 mi)

PROJECT DESCRIPTION: Bridge replacement of the SR 372 bridge over the Etowah River.

PROPOSED CONCEPT: The proposed typical section consists of two 12'-0" travel lanes and 10'-0" rural shoulders. Traffic will be maintained on existing bridge, on-site.

EXISTING ROADWAY: State Route 372

TRAFFIC: Existing: 6500 ADT (2009) Design: 10000 ADT (2029)

PROGRAMMING PROCESS     CONCEPT DEVEL.     DURING PROJ DEVEL.

**PROJECT COSTS - ALTERNATE 1 - Permanent offset alignment, 50 ft. West of the Existing Centerline**

**2/04/2003 DETAILED COST ESTIMATE FOR PROJECT NO. 642400, BRST-1022(10) IN CHEROKEE COUNTY  
SR 372 OVER THE ETOWAH RIVER, 2.3 MILES S.E. OF BALL GROUND**

ITEM NO.	ITEM	UNIT	UNIT COST	QUANT	TOTAL
<b>ROADWAY</b>					
210-0100	GRADING COMPLETE - (110019 C.Y. @ \$8.00/C.Y.)	LS	\$880,152.00	1	\$880,152.00
310-5120	GR AGGR BASE CRS, 12 INCH, INCL MATL	SY	\$11.88	11573	\$137,491.20
318-3000	AGGR SURF CRS	TN	\$14.38	100	\$1,438.00
400-3101	ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL,	TN	\$41.99	1328	\$55,764.40
402-3112	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM	TN	\$32.25	2656	\$85,658.58
402-3121	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM	TN	\$32.09	996	\$31,962.60
402-1812	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	TN	\$36.29	50	\$1,814.50
413-1000	BITUM TACK COAT	GL	\$0.84	1215	\$1,020.77
433-1000	REINF CONC APPROACH SLAB	SY	\$80.55	310	\$24,970.50
441-0301	CONC SPILLWAY, TP 1	EA	\$1,119.28	4	\$4,477.12
550-1180	STORM DRAIN PIPE, 18 IN, H 1-10	LF	\$25.31	400	\$10,124.00
550-4218	FLARED END SECTION 18 IN, STORM DRAIN	EA	\$356.29	8	\$2,850.32
576-1015	SLOPE DRAIN PIPE, 15 IN	LF	\$19.49	100	\$1,949.00
577-1100	METAL DRAIN INLET - COMPLETE ASSEMBLY	EA	\$843.19	4	\$3,372.76
641-1100	GUARDRAIL, TP T	LF	\$24.55	84	\$2,062.20
641-1200	GUARDRAIL, TP W	LF	\$10.88	4000	\$43,520.00
641-5001	GUARDRAIL ANCHORAGE, TP 1	EA	\$433.10	2	\$866.20
641-5012	GUARDRAIL ANCHORAGE, TP 12	EA	\$1,632.38	2	\$3,264.76
				<b>SUBTOTAL</b>	<b>\$1,292,758.91</b>
<b>EROSION CONTROL</b>					
161-1000	EROSION CONTROL -	LS	\$75,000.00	1	\$75,000.00
				<b>SUBTOTAL</b>	<b>\$75,000.00</b>
<b>BRIDGE</b>					
540-1102	REMOVAL OF EXISTING BR, BR NO -	LS	\$75,000.00	1	\$75,000.00
543-1001	CONSTRUCTION OF BRIDGE NO. (\$55/SF X 13440 SF)	LS	\$739,200.00	1	\$739,200.00
603-2012	STN DUMPED RIP RAP, TP 1, 12 IN	SY	\$18.25	1000	\$18,250.00
				<b>SUBTOTAL</b>	<b>\$832,450.00</b>
<b>TRAFFIC SIGN &amp; MARKING</b>					
000-0000	TRAFFIC SIGNING & MARKING	LS	\$20,000.00	1	\$20,000.00
				<b>SUBTOTAL</b>	<b>\$20,000.00</b>
<b>TRAFFIC CONTROL - STAGED CONSTRUCTION</b>					
150-1000	TRAFFIC CONTROL -	LS	\$60,000.00	1	\$60,000.00
622-1033	PRECAST CONCRETE MEDIAN BARRIER, METHOD 3	LF	\$53.01	1000	\$53,010.00
				<b>SUBTOTAL</b>	<b>\$113,010.00</b>
				<b>CONSTRUCTION COST</b>	<b>\$2,333,218.91</b>

<b>CONSTRUCTION:</b>	<b>\$2,333,219</b>	<b>RIGHT OF WAY:</b>	<b>\$80,000.00</b>
<b>E &amp; C (10%):</b>	<b>\$233,322</b>	<b>ACQUIRED BY:</b>	<b>DOT</b>
<b>INFLATION:</b> (2 yrs. @ 5% per yr)	<b>\$239,155</b>	<b>UTILITIES:</b>	<b>\$10,000.00</b>
<b>TOTAL CONST COSTS</b>	<b>\$2,805,696</b>		

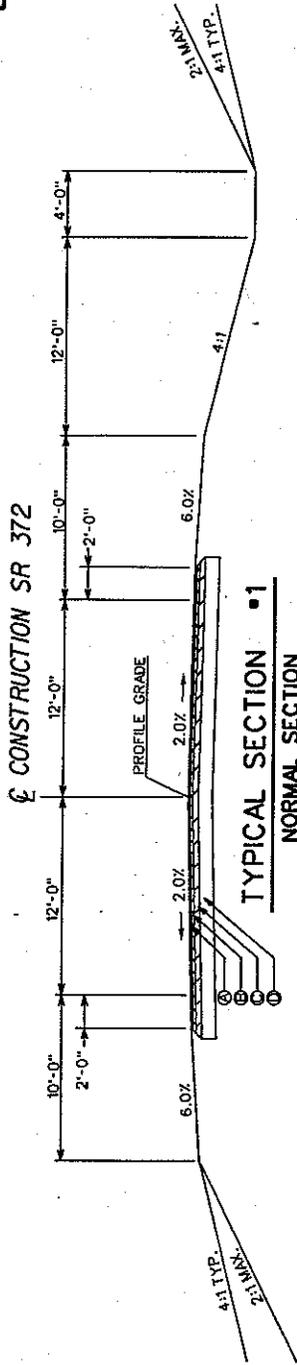
**PROJECT COSTS - ALTERNATE 3 - Stage Construction of Proposed Bridge w/ Maintenance of Traffic**

**2/04/2003 DETAILED COST ESTIMATE FOR PROJECT NO. 642400, BRST-1022(10) IN CHEROKEE COUNTY  
SR 372 OVER THE ETOWAH RIVER, 2.3 MILES S.E. OF BALL GROUND**

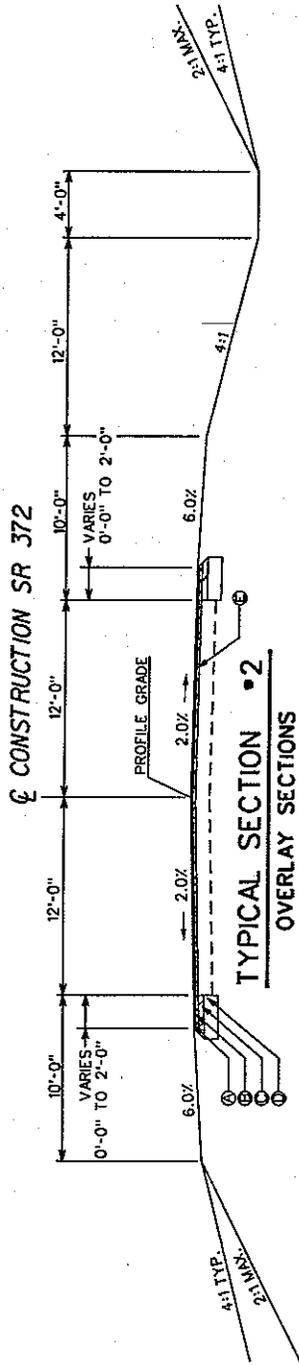
ITEM NO.	ITEM	UNIT	UNIT COST	QUANT	TOTAL
<b>ROADWAY</b>					
210-0100	GRADING COMPLETE - (110,019 C.Y. @ \$8.00/C.Y.)	LS	\$880,152.00	1	\$880,152.00
310-5120	GR AGGR BASE CRS, 12 INCH, INCL MATL	SY	\$11.88	11573	\$137,491.20
318-3000	AGGR SURF CRS	TN	\$14.38	100	\$1,438.00
400-3101	ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL,	TN	\$41.99	1328	\$55,764.40
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641-5001	GUARDRAIL ANCHORAGE, TP 1	EA	\$433.10	2	\$866.20
641-5012	GUARDRAIL ANCHORAGE, TP 12	EA	\$1,632.38	2	\$3,264.76
				<b>SUBTOTAL</b>	<b>\$1,294,573.41</b>
<b>EROSION CONTROL</b>					
161-1000	EROSION CONTROL -	LS	\$75,000.00	1	\$75,000.00
				<b>SUBTOTAL</b>	<b>\$75,000.00</b>
<b>BRIDGE</b>					
540-1102	REMOVAL OF EXISTING BR, BR NO -	LS	\$85,000.00	1	\$85,000.00
543-1001	CONSTRUCTION OF BRIDGE NO. (\$65/SF X 13440 SF)	LS	\$873,600.00	1	\$873,600.00
603-2012	STN DUMPED RIP RAP, TP 1, 12 IN	SY	\$18.25	1000	\$18,250.00
				<b>SUBTOTAL</b>	<b>\$976,850.00</b>
<b>TRAFFIC SIGN &amp; MARKING</b>					
000-0000	TRAFFIC SIGNING & MARKING	LS	\$20,000.00	1	\$20,000.00
				<b>SUBTOTAL</b>	<b>\$20,000.00</b>
<b>TRAFFIC CONTROL - STAGED CONSTRUCTION</b>					
150-1000	TRAFFIC CONTROL -	LS	\$80,000.00	1	\$80,000.00
622-1033	PRECAST CONCRETE MEDIAN BARRIER, METHOD 3	LF	\$53.01	1000	\$53,010.00
				<b>SUBTOTAL</b>	<b>\$133,010.00</b>
				<b>CONSTRUCTION COST</b>	<b>\$2,499,433.41</b>

<b>CONSTRUCTION:</b>	<b>\$2,499,433</b>	<b>RIGHT OF WAY:</b>	<b>\$60,000.00</b>
<b>E &amp; C (10%):</b>	<b>\$249,943</b>	<b>ACQUIRED BY:</b>	<b>DOT</b>
<b>INFLATION:</b> (2 yrs. @ 5% per yr)	<b>\$256,192</b>	<b>UTILITIES:</b>	<b>\$10,000.00</b>
<b>TOTAL CONS'T COSTS</b>	<b>\$3,005,569</b>		

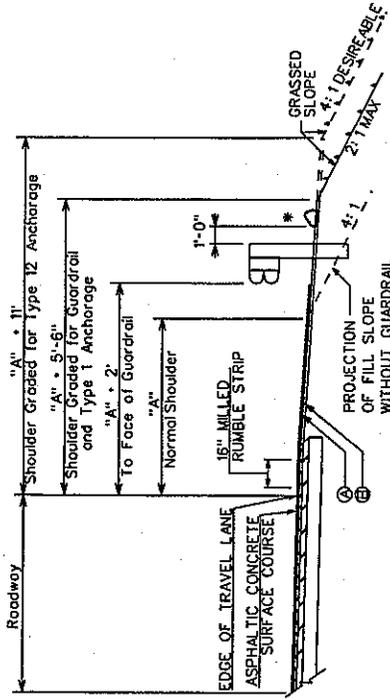
STATE	PROJECT NUMBER
GA	BR57-10221(01)



**TYPICAL SECTION #1**  
NORMAL SECTION



**TYPICAL SECTION #2**  
OVERLAY SECTIONS



**TYPICAL SHOULDER DETAIL FOR GUARDRAIL AND ASPHALT SHOULDER**  
SEE PLAN FOR LOCATION

**REQUIRED PAVEMENT**

- (A) RECYCLED ASPH CONC 12.5 mm SUPERPAVE, GP 2 ONLY, INCL BITUM & H LIME (165 LBS/SY)
- (B) RECYCLED ASPH CONC 19 mm SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME (220 LBS/SY)
- (C) RECYCLED ASPH CONC 25 mm SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME (440 LBS/SY)
- (D) GR AGGR BASE CRS, 12 INCH, INCL MATL
- (E) RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME, AS REQ'D

\* ASPHALTIC CONCRETE CURB PER SECTION #36 SHALL BE REQUIRED WHERE SPECIFIED. TYPICAL USE IS FOR EROSION PREVENTION OF HIGH FILL SLOPES. WHERE SPILLWAYS ARE REQUIRED.

<b>HEATH &amp; LINEBACK ENGINEERS</b> INCORPORATED 1000 W. BROADWAY, SUITE 210 ATLANTA, GEORGIA 30334		<b>GEORGIA DEPARTMENT OF TRANSPORTATION</b> <b>TYPICAL SECTIONS</b> PROJECT: BR57-10221(01) COUNTY: CHEROKEE DATE: NOVEMBER 2002	
DATE	REVISED	DATE	REVISIONS

**NEED AND PURPOSE**  
**PROJECT BRST-1022(10), CHEROKEE COUNTY**  
**PI No. 642400**

**BRIDGE REPLACEMENT**

Bridge project BRST-1022(10) will replace the structurally deficient bridge located on State Road (SR) 372 over Etowah River, 2.3 miles southeast of the city of Ball Ground.

The existing bridge was constructed in 1960. The original design load capacity is H15 and the bridge is classified as Functionally Obsolete. The existing bridge's sufficiency rating is 39.17. The sufficiency rating, a number from 0 to 100, is a method of evaluating structural adequacy and safety, serviceability and functional obsolescence. The resultant rating would range between zero, which represents an entirely insufficient or deficient bridge; and 100, which represents an entirely sufficient bridge. The Office of Bridge Maintenance has determined that any structure with a sufficiency rating less than 50 should be replaced rather than improved. This project will replace the existing bridge with a structurally adequate bridge.

This section of SR 372 is classified as a Rural Major Collector, is a designated school bus route and is not on a bike route. The posted speed limit along SR 372 is 55 mph. The Annual Average Daily Traffic (AADT) along this section of roadway was 5,200 vehicles in 2000. The projected (2029) AADT for this section of roadway is 10,000 with 8 percent trucks.

Replacing the existing bridge will bring it up to current design standards and in doing so will improve the operation and safety of this roadway.

**Department of Transportation  
State of Georgia**

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**INTERDEPARTMENT CORRESPONDENCE**

**FILE** BRST-1022(10), Cherokee County                      **OFFICE** Environment/Location  
P.I. # 642400  
**DATE** January 24, 2002

**FROM** Harvey D. Keeper, State Environment/Location Engineer

**TO** James B. Buchan, P.E., State Consultant Design Engineer.  
Attn. Ted Cashin

**SUBJECT** Traffic Assignments for S.R. 372 Etowah River 2.3 Mi SE of Ball Ground in Cherokee County.

We are furnishing estimated traffic assignments for the above project is attached:

2000 AADT = 5200  
2009 AADT = 6500  
2029 AADT = 10000  
K = 9%  
D = 60%  
T = 8%  
24 HOUR T = 10%  
S.U. = 5%  
COMB. = 5%

If you have any questions concerning this information please contact Abby Ebodaghe at (404) 699-4460.

HDK/AFE

# FLEXIBLE PAVEMENT DESIGN ANALYSIS

Project: BRST-1022(10)

County: CHEROKEE

P.I. no.: 642400

Description: SR 372 OVER THE ETOWAH RIVER

Traffic Data (NOTE: AADTs are one-way)

24-hour Truck Percentage: 10.00%

AA DT initial year of design period: 3,900 vpd (2009)

AA DT final year of design period: 6,000 vpd (2029)

Mean AA DT (one-way): 4,950 vpd

Design Loading

Mean AA DT		LDF		Trucks		18-K ESAL		Total Daily Loads
4,950	*	1.00	*	0.100	*	1.06	=	526

Total predicted design period loading = 526 \* 20 \* 365 = 3,839,800

Design Data

Terminal Serviceability Index: 2.50

Soil Support: 2.50

Regional Factor: 2.00

PROPOSED FLEXIBLE PAVEMENT STRUCTURE

Material	Thickness Inches	(mm)	Structural Coefficient	Structural Value
12.5 mm Superpave	1.50	(38)	0.44	0.66
19 mm Superpave	2.00	(51)	0.44	0.88
25 mm Superpave	1.00	(25)	0.44	0.44
	3.00	(76)	0.30	0.90
Graded Aggregate Base	12.00	(305)	0.16	1.92
Required SN = 5.65			Proposed SN = 4.80	

>>> Proposed pavement is 15.1% Underdesign <<<

Remarks: Heath & Lineback Engineers, Inc.

Prepared by Andrew C. Heath January 31, 2003  
Date

Recommended State Materials & Research Engineer Date

Approved State Consultant Design Engineer Date



# BRIDGE INVENTORY DATA LISTING GEORGIA DEPARTMENT OF TRANSPORTATION

Structure ID: 057-0036-0

Cherokee

SUFF. RATING

39.17

### Programming Data

201 Project No.: BA (4) PR 604 (10)  
 202 Plans Available: 1  
 249 Prop. Proj. No. BRST-1022 (10)  
 250 Approval Status: 0000  
 251 P.I. No.: 642400-  
 252 Contract Date: 02/01/2004  
 260 Seismic No.: 00012  
 75 Type Work: 34 1  
 94 Bridge Imp. Cost \$ 209  
 95 Roadway Imp. Cos \$ 49  
 96 Total Imp Cost: \$ 348  
 76 Imp. Length: 000403  
 97 Imp. Year: 1990  
 114 Future ADT: 007800 Year: 2020

### Measurements

\* 29 ADT: 005200 Year: 2000  
 109 % Trucks: 10  
 \* 28 Lanes On: 02 Under: 00  
 210 No. Tracks On: 00 Under: 00  
 \* 48 Max. Span Length: 0064  
 \* 49 Structure Length: 192  
 51 Br. Rwdy. Width: 24.00  
 52 Deck Width: 29.80  
 \* 47 Tot. Horz. Cl: 24.00  
 50 Curb/Sdewlk Width: 2.20/2.20  
 32 Approach Rdwy Width: 024  
 \* 229 Shoulder Width:  
 Rear Lt: 5.00 Type: 8 Rt: 5.00  
 Fwrd Lt: 5.00 Type: 8 Rt: 5.00  
 Pavement Width:  
 Rear: 24.00 Type: 2  
 Fwrd: 24.00 Type: 2  
 Intersection Rear: 0 Fwrd: 0  
 36 Safety Features Br. Rail:  
 Transition: 2

### Hydraulic Data

215 Waterway Data  
 Highwater Elev.: 0000.0 Year: 1900  
 Avg. Streambed Elev.: 0000.0 Freq.: 00  
 Drainage Area: 00470  
 Area Of Opening: 002060  
 113 Scour Critical: 6  
 216 Water Depth: 05.0 Br. Height: 27.3  
 222 Slope Protection: 1  
 221 Spur Dikes Rear: 0 Fwrd: 0  
 219 Fender System: 0  
 220 Dolphin: 0  
 223 Culvert Cover:  
 Type: 000  
 No. Barrels: 0  
 Width: 0.00 Height: 0.00  
 Length: 0 Apron: 0 Diver: WS  
 \* 265 U/W Insp. Area: 1

\* Location I.D. No.: 057-00372D-011.65N

### Ratings

65 Inventory Rating Method: 2  
 63 Inventory Rating Method: 2  
 66 Inventory Type: 2 Rating: 22  
 64 Operating Type: 2 Rating: 36  
 231 Calculated Loads  
 H-Modified: 20 0  
 HS-Modified: 25 0  
 Type 3: 26 0  
 Type 3s2: 40 0  
 Timber: 36 0  
 Piggyback: 40 0  
 261 H Inventory Rating: 15  
 262 H Operating Rating: 21  
 67 Structural Evaluation: 5  
 58 Deck Condition: 4  
 59 Superstructure Condition: 7  
 \* 227 Collision Damage: 0  
 60A Substructure Condition: 5  
 60B Scour Condition: 7  
 60C Underwater Condition: 6  
 71 Waterway Adequacy: 6  
 61 Channel Protection Cond: 8  
 68 Deck Geometry: 2  
 69 Under-Ctr. Horz/Vert: N  
 72 Appr. Alignment: 6  
 62 Culvert: N

### Posting Data

70 Bridge Posting Required: 5  
 41 Struct Open, Posted, Cl: A  
 \* 103 Temporary Structure: 0  
 232 Posted Loads H-Modified: 00  
 HS-Modified: 00  
 Type 3: 00  
 Type3s2: 00  
 Timber: 00  
 Piggyback: 00  
 253 Notification Date 02/01/1901  
 253 Fed Notify Date: 02/01/1901 0

DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA

1015.03.1A. 032  
Project Concept  
Conformity - Certification

INTERDEPARTMENTAL CORRESPONDENCE

File

OFFICE Planning

DATE December 5, 2002

FROM

*Cora / Cook*  
*for*

Marta V. Rosen, State Transportation Planning Administrator

TO

James B. Buchan, P.E., State Consultant Design Engineer  
Attn. Ted Cashin

SUBJECT

PROJECT CONCEPT CONFORMITY - CERTIFICATION FOR CONCEPT REPORT -  
Project BRST-1022(10) Cherokee County, PI # 642400, ARC # CH 204, SR 372 over  
the Etowah River, bridge replacement.

The Office of Planning is providing this letter of certification as defined in the Plan Development Process Manual of Guidance. The proposed project is in conformance with the adopted Air Quality Model of the Atlanta Regional Transportation Plan and the State Transportation Improvement Program.

By copy of this letter, the project concept is found to conform to the Atlanta Regional Transportation Plan based on the December 5, 2002, review. This project can not be open to traffic before July 1, 2005 to comply with ARC's network 2010. If any changes occur to the proposed concept, please notify this office immediately. If you have any questions, please call Roxana Ene at 404-463-4377.

MVR:rre

cc: Tom Turner

HEATH & LINBACK ENGINEERS,  
INC.

RECEIVED  
DEC 16 2002

**CONCEPT MEETING MINUTES**  
**December 9, 2002**

**CONCEPT MEETING FOR BRIDGE REPLACEMENT WORK ORDERS**

**W.O. #3 – SR 372 over Etowah River, 2.3 mi SE of Ball Ground**

**Project No.: BRST-1022(10), Cherokee County**

**PI No.: 642400**

**LOCATION:** GADOT District 6 Office  
Cartersville, GA

**Attendees:** Allen Krivsky – Heath & Lineback Engineers  
Shawn Fleet – Heath & Lineback Engineers  
Andrew Heath – Heath & Lineback Engineers  
John Durand – Parsons Brinckerhoff Quade & Douglas  
Brian Dickman – Parsons Brinckerhoff Quade & Douglas  
Tom Gissy – ROW Consultant  
Dewayne Comer – Preconstruction Engineer  
Ted Cashin – GDOT Office of Consultant Design  
Michael Long – GDOT Traffic Operations  
Stanley M<sup>c</sup>Carley – GDOT District 6 Design  
Dennis Thompson – Cherokee County  
Geoffrey Morton – Cherokee County

Allen Krivsky described the project and read through the concept report to familiarize all attendees with the project.

John Durand and Brian Dickman made note that there will be significant environmental concerns related to the project. An archaeological site surrounds the existing bridge site, and likely extends both up and downstream a great distance in the floodplain surrounding the river. (This archaeological site, known as the Long Swamp Site, is NRHP-eligible and contains a mound). In addition to these archaeological findings there are also endangered species found at the project site. (Two federally endangered species of fish, the Amber and Etowah darter are present, and also the state endangered Freckleberry madtom is present at the project site).

John Durand stated that at least a Phase II archaeology study, and most likely a Phase III archaeology study (including curation of artifacts) would be needed. This depth of study will require a significantly longer time to complete than the 9 months typical for many less sensitive areas.

John Durand and Dewayne Comer concurred that using a long span structure, enough to completely clear the river and allow the abutments and end rolls to be well away from the riverbanks would help minimize environmental impacts from the proposed bridge.

Dwayne Comer noted that the amount budgeted for Utilities in the cost estimates is likely too small. It was recommended that Heath & Lineback Engineers contact Kerry Bonner in the District 6 Utilities office and request a more accurate estimate of utility relocation costs to include in the concept cost estimates.

Ted Cashin requested Heath & Lineback Engineers add an “on-site detour alternate” to the “Alternates Considered” section of the concept report.

Heath & Lineback Engineers presented an exhibit depicting three potential alignment locations. It was agreed that because of the significant environmental issues related to this project, the best alignment would minimize the total project disturbed area. The alignment chosen curves away from the existing roadway toward the east side of the road and passes approximately 50' east of the existing bridge centerline, then crosses back to the west side of the existing roadway to tie back into the existing roadway. This alignment, or a slight variation of it, is more complex from a construction staging point of view, but has the desired effect of minimizing the project footprint. An undesirable aspect of this alignment is the likely displacement of a residence on the west side of the existing roadway near the north end of the project alignment.

Possible off-site detours were discussed. Heath & Lineback Engineers presented an exhibit detailing three potential off-site detour routes. Detour Alternate #1 was the best of the three possible options, however it utilizes East Cherokee Dr., a county road that already carries a large volume of traffic. The second potential detour route utilized all State Route highways, but was rejected because of excessive length (19.73 mi.). The third potential route utilized mostly county roads. It was rejected because of inadequate pavement strength and sub-standard roadway geometry. It was concluded that there are no acceptable off-site detours. The use of an off-site detour for this project was rejected.

It is believed the Etowah River is not used as a route for transporting goods. The only watercrafts known to use the river are small fishing vessels.

John Durand recommended that the existing bridge piers be cut off at ground level and removed in such a manner as to minimize disturbing the riverbanks or bed.

In response to Ron Wishon's emailed comment, Heath & Lineback Engineers will show the pay item for earthwork based on an actual price per cubic yard of earthwork rather than "Lump Sum".

The estimated year of construction is approximately 2007, however this date may be moved up somewhat, depending upon availability of funding.

The meeting concluded with all in agreement that Heath & Lineback Engineers should pursue development of the best proposed alignment, as detailed above, to minimize environmental impacts, and provide the smallest disturbed area possible.

**NOTICE OF LOCATION AND DESIGN APPROVAL**

**Project No. BRST – 1022(10)**

**P.I. No. 642400**

Notice is hereby given in compliance with Georgia code 22-2-109 that the Georgia Department of Transportation has approved the Location and Design of the above project.

This project consists of improvements of SR 372 over Etowah River, located in Cherokee County, in G.M.D 1031 and 1000. The improvement project includes replacing the existing bridge over the Etowah River.

Date of Location Approval: APRIL 9, 2003

Drawings and/or maps, and/or plats of the proposed project as approved are on file and are available for inspection at the Georgia Department of Transportation.

*Mike Thomason*

*District 6, Area 1 Engineer*

*Email: [mike.Thomason@dot.state.ga.us](mailto:mike.Thomason@dot.state.ga.us)*

*874 Peoples Valley Road, N.W.*

*Cartersville, Georgia 30120*

*770-387-3680*

Any interested party may obtain a copy of the drawings or maps or plats or portions thereof by paying a nominal fee and requesting in writing to:

*Ted Cashin*

*Office of Consultant Design*

*Email: [ted.cashin@dot.state.ga.us](mailto:ted.cashin@dot.state.ga.us)*

*Georgia Department of Transportation*

*No. 2 Capitol Square*

*Atlanta, Georgia 30334*

*404-463-6135*

Any written request or communication in reference to this project or notice SHOULD include the PROJECT and P.I. NUMBERS as noted at the top of this notice.

**DEPARTMENT OF TRANSPORTATION**  
**STATE OF GEORGIA**  
*Office of Consultant Design*

**PROJECT CONCEPT REPORT (DRAFT)**

Project Number: BRST-1022(10)

County: Cherokee

P. I. Number: 642400

Federal Route Number: N/A

State Route Number: 372

DESCRIPTION: SR 372 over Etowah River

Recommendation for approval: \_\_\_\_\_

DATE 2-18-03



Project Manager  
James B. Buchanan *MBP*  
State Consultant Design Engineer

DATE 2-18-03

The concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Plan (RTP) and/or the State Transportation Improvement Program (STIP).

DATE \_\_\_\_\_

\_\_\_\_\_  
State Transportation Planning Administrator

DATE \_\_\_\_\_

\_\_\_\_\_  
State Office of Financial Management Administrator

DATE \_\_\_\_\_

\_\_\_\_\_  
State Environmental/Location Engineer

DATE \_\_\_\_\_

\_\_\_\_\_  
State Traffic Safety and Design Engineer

DATE \_\_\_\_\_

\_\_\_\_\_  
District 6 Engineer

DATE \_\_\_\_\_

\_\_\_\_\_  
State Project Review Engineer

DATE 2/20/03

Paul V. Hillis Jr.  
State Bridge and Structural Design Engineer

**DEPARTMENT OF TRANSPORTATION**  
**STATE OF GEORGIA**  
*Office of Consultant Design*

**PROJECT CONCEPT REPORT (DRAFT)**

Project Number: BRST-1022(10)

County: Cherokee

P. I. Number: 642400

Federal Route Number: N/A

State Route Number: 372

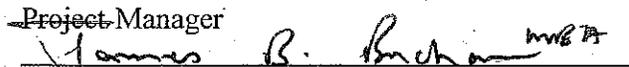
DESCRIPTION: SR 372 over Etowah River

- Recommendation for approval:

DATE 2-18-03



DATE 2-18-03

~~Project Manager~~  
  
State Consultant Design Engineer

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DATE 2/20/03

  
State Transportation Planning Administrator

DATE \_\_\_\_\_

\_\_\_\_\_  
State Office of Financial Management Administrator

DATE \_\_\_\_\_

\_\_\_\_\_  
State Environmental/Location Engineer

DATE \_\_\_\_\_

\_\_\_\_\_  
State Traffic Safety and Design Engineer

DATE \_\_\_\_\_

\_\_\_\_\_  
District 6 Engineer

DATE \_\_\_\_\_

\_\_\_\_\_  
State Project Review Engineer

DATE \_\_\_\_\_

\_\_\_\_\_  
State Bridge and Structural Design Engineer

DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA  
Office of Consultant Design

PROJECT CONCEPT REPORT (DRAFT)

Project Number: BRST-1022(10)

County: Cherokee

P. I. Number: 642400

Federal Route Number: N/A

State Route Number: 372

DESCRIPTION: SR 372 over Etowah River

Recommendation for approval:

DATE 2-18-03

Ted K. ...

DATE 2-18-03

~~Project Manager~~  
James B. Buchanan *mwb*  
State Consultant Design Engineer

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DATE \_\_\_\_\_

\_\_\_\_\_  
State Transportation Planning Administrator

DATE \_\_\_\_\_

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State Office of Financial Management Administrator

DATE \_\_\_\_\_

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State Environmental/Location Engineer

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\_\_\_\_\_  
State Traffic Safety and Design Engineer

DATE \_\_\_\_\_

\_\_\_\_\_  
District 6 Engineer

DATE 2/25/03

David J. Mullin *DM*  
State Project Review Engineer

DATE \_\_\_\_\_

\_\_\_\_\_  
State Bridge and Structural Design Engineer

DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA  
Office of Consultant Design

PROJECT CONCEPT REPORT (DRAFT)

Project Number: BRST-1022(10)

County: Cherokee

P. I. Number: 642400

Federal Route Number: N/A

State Route Number: 372

DESCRIPTION: SR 372 over Etowah River

Recommendation for approval:

DATE 2-18-03

DATE 2-18-03

Project Manager  
James B. Buchanan *mab 18*  
State Consultant Design Engineer

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DATE \_\_\_\_\_

\_\_\_\_\_  
State Transportation Planning Administrator

DATE \_\_\_\_\_

\_\_\_\_\_  
State Office of Financial Management Administrator

DATE \_\_\_\_\_

\_\_\_\_\_  
State Environmental/Location Engineer

DATE \_\_\_\_\_

\_\_\_\_\_  
State Traffic Safety and Design Engineer

DATE 2/20/03

Kat Sog  
District 6 Engineer

DATE \_\_\_\_\_

\_\_\_\_\_  
State Project Review Engineer

DATE \_\_\_\_\_

\_\_\_\_\_  
State Bridge and Structural Design Engineer

DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA  
Office of Consultant Design

PROJECT CONCEPT REPORT (DRAFT)

Project Number: BRST-1022(10)

County: Cherokee

P. I. Number: 642400

Federal Route Number: N/A

State Route Number: 372

DESCRIPTION: SR 372 over Etowah River

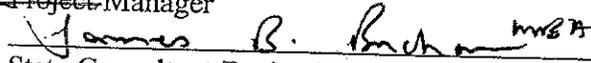
Recommendation for approval:

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DATE 2-18-03

Project Manager



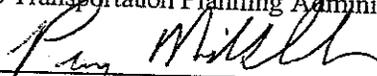
State Consultant Design Engineer

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DATE \_\_\_\_\_

State Transportation Planning Administrator

DATE \_\_\_\_\_



State Office of Financial Management Administrator

DATE \_\_\_\_\_

State Environmental/Location Engineer

DATE \_\_\_\_\_

State Traffic Safety and Design Engineer

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District 6 Engineer

DATE \_\_\_\_\_

State Project Review Engineer

DATE \_\_\_\_\_

State Bridge and Structural Design Engineer

**DEPARTMENT OF TRANSPORTATION**  
**STATE OF GEORGIA**  
*Office of Consultant Design*

**PROJECT CONCEPT REPORT (DRAFT)**

Project Number: BRST-1022(10)

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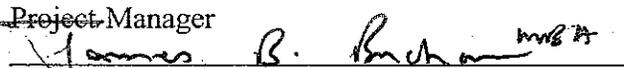
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Recommendation for approval:

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DATE 2-18-03

Project Manager  
  
State Consultant Design Engineer

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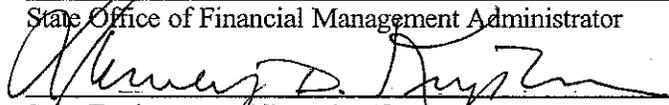
DATE \_\_\_\_\_

\_\_\_\_\_  
State Transportation Planning Administrator

DATE \_\_\_\_\_

\_\_\_\_\_  
State Office of Financial Management Administrator

DATE 2/26

  
State Environmental/Location Engineer

DATE \_\_\_\_\_

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State Traffic Safety and Design Engineer

DATE \_\_\_\_\_

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District 6 Engineer

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State Project Review Engineer

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State Bridge and Structural Design Engineer